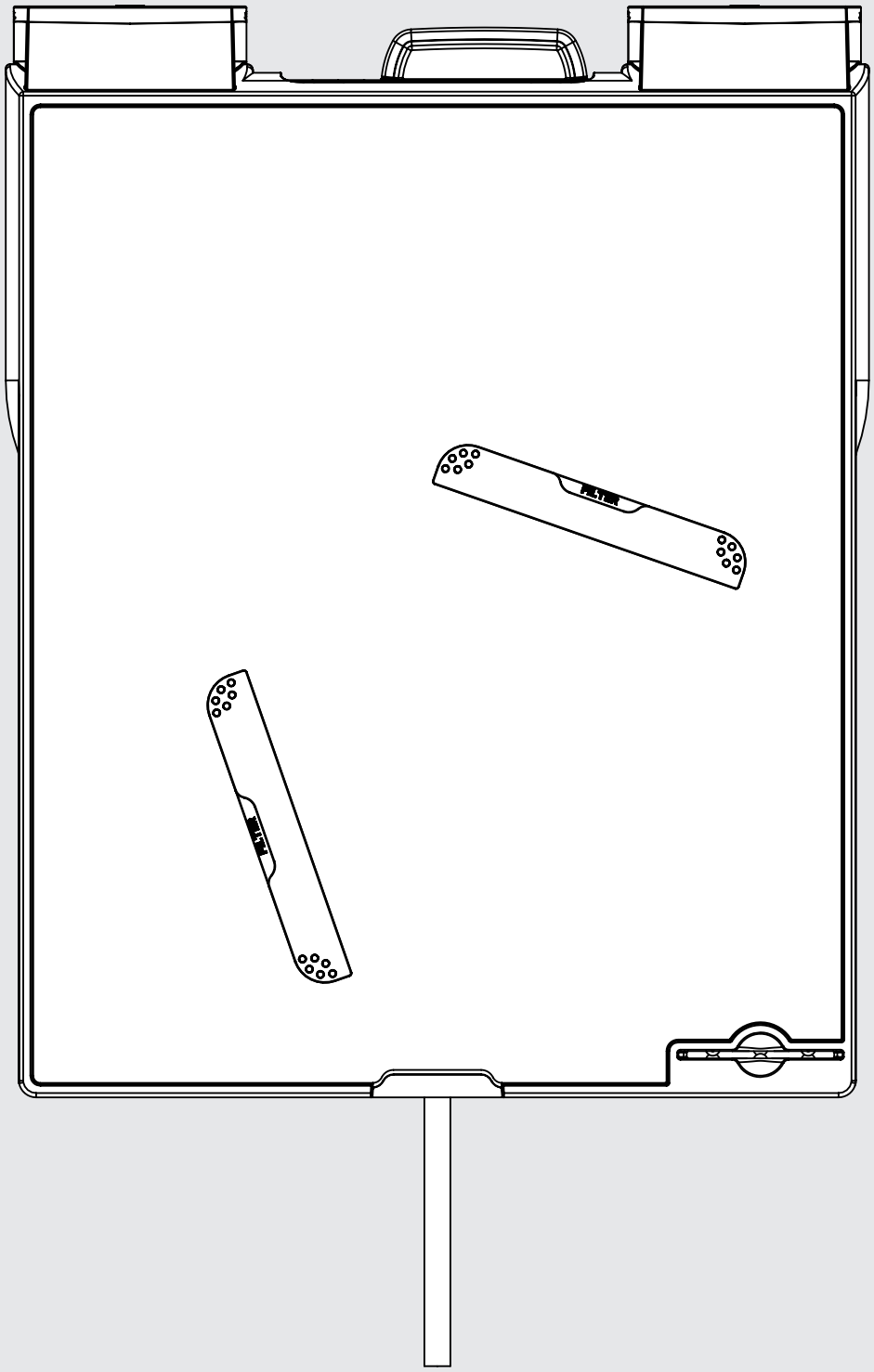
HEATRAE SADIA

SMARTER | CLEANER | WARMER

Advance

Installer manual



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1. Introduction

Indoor air quality and energy efficiency are very important considerations in dwellings today. The Heatrae Sadia Advance Heat Recovery Ventilation Unit has been developed to meet these demands offering controlled ventilation for a healthy and comfortable indoor climate in full compliance with current building regulations, while retaining the heat to an efficiency of up to 90%.

For the home owner or occupier:
This document explains the working principle of the ventilation system and how to operate and maintain this unit. Never switch off the ventilation by disconnecting the power cord from the mains supply, (except for service and maintenance intervals.)

For the installer:
This document explains how to install and commission the unit.
It is very important to read these instructions and to obtain all regulations for the ventilation of dwellings.
Refer in England and Wales to table 5.1a of the Building Regulations for clarification on the extract rates and 5.1b for the minimum low rate table.
For Northern Ireland refer to the technical Guidance Document F, Ventilation.
For Scotland refer to the Technical Handbook 3.14, Ventilation.

NOTE

- Read this manual carefully.
- Failure to follow these instructions could cause an adverse effect on the health of the occupier.
- Leave these instructions with the user.

1.1 Configuration

The Advance has been developed for apartments and small houses with an internal floor area of up to 115m^2.
It can be fitted as a wall, floor or ceiling mounted unit (for example in the space of a kitchen cupboard).
Dimensions 597mm width x 280mm depth x 760mm height.

1.2 Heatrae Sadia conditions

Heatrae Sadia does not accept any liability for damage caused by non-observance of the installation instructions. Service activities must exclusively be carried out by Heatrae Sadia or by registered installers using original Heatrae Sadia parts.

2. Safety

2.1 General

- Do not use this appliance for functions other than those described in this booklet.
- Never touch the appliance with wet or damp hands or when barefoot.
- Do not store inflammable products in the neighbourhood of the unit.
- The unit is only suitable for 230 VAC/50Hz electric mains.
- Never modify the fan or electronics by yourself.
- Never plug in the power cord if the motor part is not placed into the unit.

WARNING

- Always disconnect the electric power cord before you remove the motor and control box unit.

2.2 Liability of the installer

- Balancing and commissioning of the installation.
- Report measured air volumes on the grilles.
- Compliance to requirements and local additional rules.
- Explanation of the ventilation system to the user.
- Warning for the user, to check or replace the air filters on time.
- All the above, as set out in the latest edition of the Domestic Ventilation Compliance Guide and the Appendix Q - Installation Guide and Checklist.
- Instructions to be left with customer.

2.3 Liability of the occupant/user

- Cleaning or replacement of the filters in the Advance unit at the correct time. See section 9 Maintenance (p.20).
- Cleaning the grilles in the rooms at regular intervals.

Note:

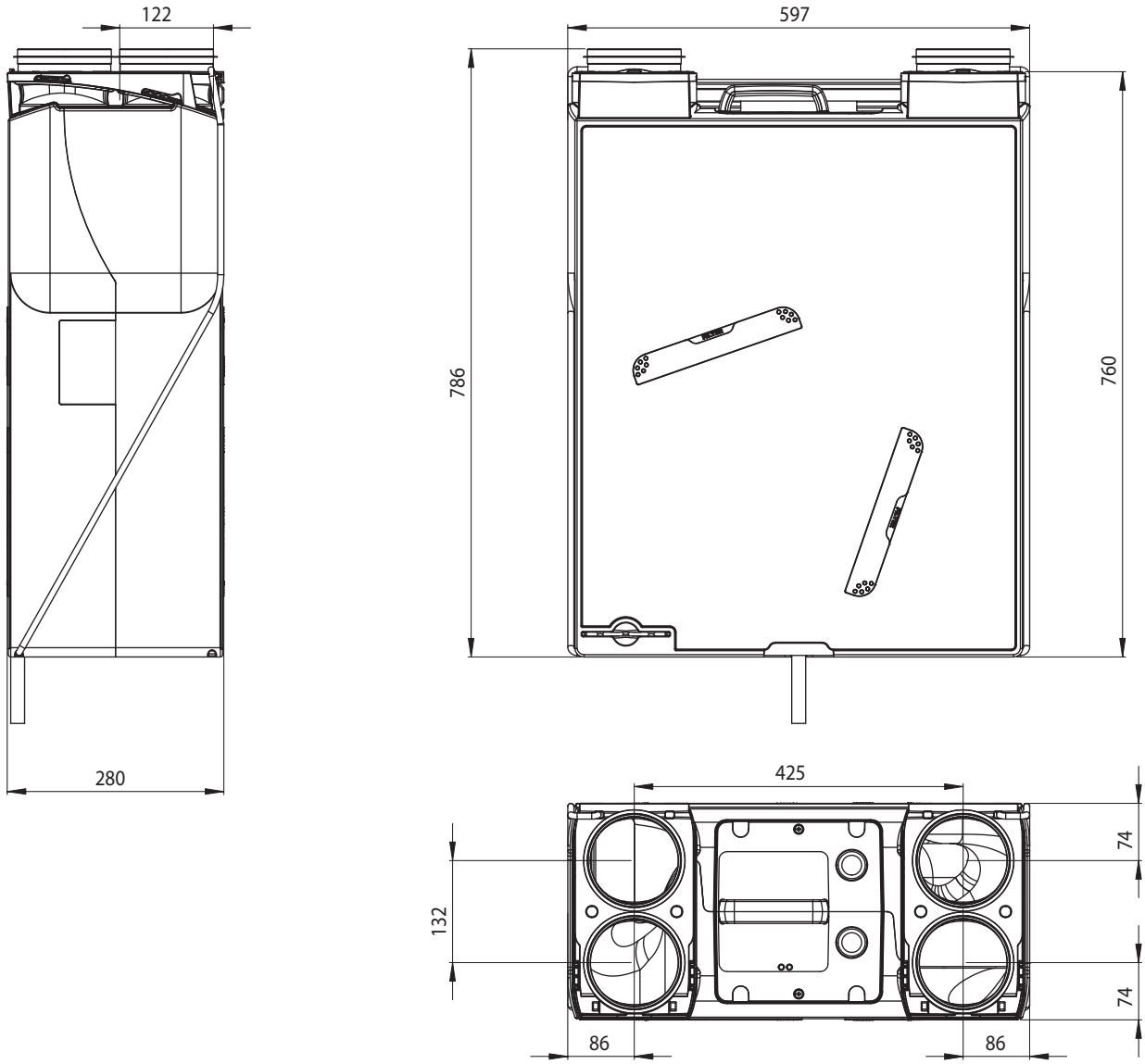
- The grilles should always be placed back in their original location and position. If the grilles are changed or placed in a wrong position the ventilation volumes will no longer be correct and the ventilation system might not work properly.

WARNING

- Clean and/or replace the filters on time.
- Filter pollution could damage your health.

3. Technical data

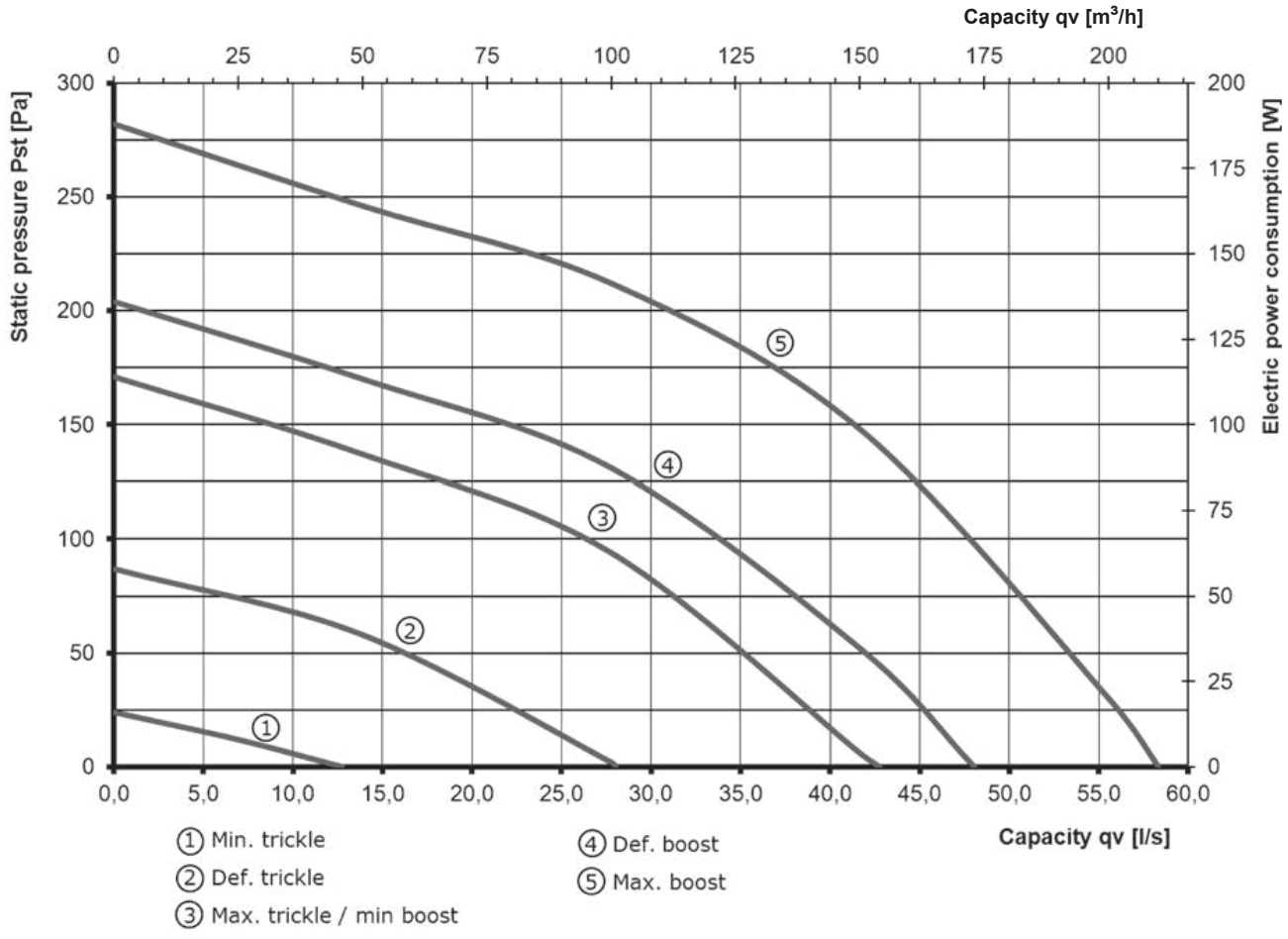
3.1 Dimensions and weight



Supply		**230/240 ~ 50Hz**
External fuse		**3A**
Covers / Insulation Material		**EPP Foam**
Dimensions of unit (mm)	**Height**	**786**
	Width	**597**
	Depth	**280**
Clearances for servicing (mm)	**Sides**	**10**
	Top	**(ducting)**
	Below	**150**
	Front	**650**
Weight	**Ex fixing bracket**	**11 Kg**
	Inc fixing bracket	**12.5 Kg**
Insulation Class		**Class ii / Double insulated**
Moisture protection		**IP30**

3.2 Performance

Description:	units	Kitchen + 1 wet room	Kitchen + 2 wet rooms	Kitchen + 3 wet rooms	Kitchen + 4 wet rooms	Maximum performance
		2 × 15 l/s	2 × 21 l/s	2 × 27 l/s	2 × 33 l/s	2 × 42 l/s
Heat recovery efficiency	%	90	89	88	87	–
Specific fan power (SFP)	W/l/s	0.37	0.48	0.65	0.83	–
230 VAC current consumption	Amp.	0.02	0.04	0.07	0.12	0.61
230 VAC power consumption	Watt	5.5	10.1	17.5	27.0	3 79
Fan speed	rpm	1020	1290	1560	1860	2700
Pressure available for external supply/exhaust duct	Pa	14/16	15/22	18/31	26/50	155/148
Sound Power Lw,a Radiant	dB(A)	42.0	42.5	47.5	51.0	61.5
Supply	dB(A)	34.0	36.5	43.0	45.0	59.0
Exhaust	dB(A)	35.0	38.0	42.5	47.0	58.5



4. Description controller functions

4.1 Fan motor speed control

The Advance unit has a 3-speed controlled fan motor. The low and boost speed can be adjusted by a manual potentiometer at the top of the unit. (See section 6.1 commissioning p.15).
The middle speed is a result of a factory setting and the manual adjusted low and boost speed.

4.2 Frost protection

Note for the user:

When the outside temperature is below -1 °C the Advance unit has a built-in temperature sensor located within the supply air from outside to switch-off the fan motor. If this occurs the fan motor will switch off for a short period and will automatically restart itself when the temperature rises.
For uninterrupted air supply and extract volumes in regions with low outside temperatures (‹ –10 °C for more than 24 hours), please install a pre-heater in the supply air from outside to the dwelling.
Characteristics:

- Fan motor ‘off’, if sensor ‹ –1.5 °C.
- 2 hours ‘off’ time.
- 30 minutes ‘on’ time, fan motor at 450 rpm’s.
- Fan motor ‘on’ to normal selected position, if sensor › –1 °C.

4.3 Remote controller

The RFT (radio frequency transmitter) has a 3-speed control and a timer for boost speed function.
Maximum twenty RFT-remote controllers can be connected to one Advance unit.

CAUTION
The range of the RFT operation (transmitter) is 100 metres in a free field.
The distance at which the RFT operation switch can function properly depends on the obstacles interfering with the RFT signal, i.e, the walls and floors between the RFT operation switch and the receiver.

5. Installation

5.1 Legend for pictograms

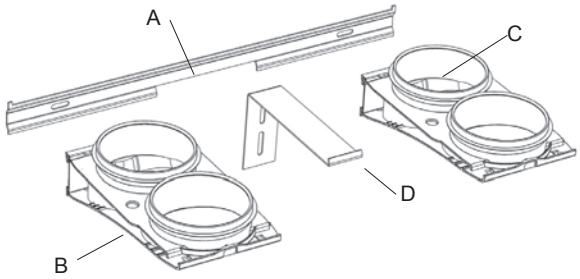
- Fresh air from outside

- Stale air to outside

- Fresh air to dwelling

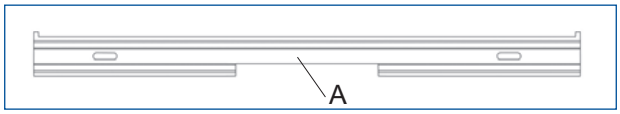
- Stale air from dwelling

Insulate the ducts to and from outside to avoid condensation on the ducts. Insulate all ducts and also the condensate drain, if the unit is mounted outside the thermal envelope of the building.

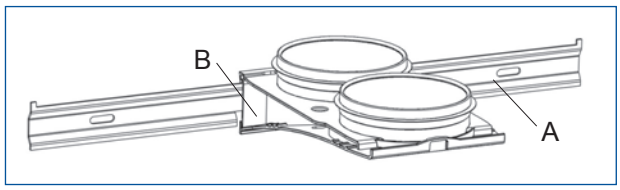


A - mounting bracket (×1)
B - duct adapter (×2)
C - spigot seal (×4)
D - ceiling mounting strip (×1)

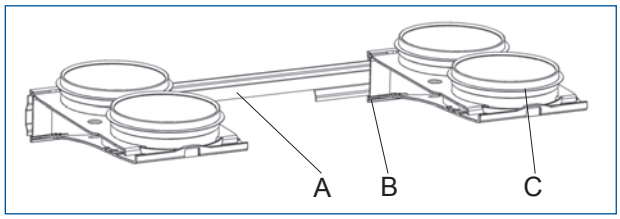
5.3 Wall mounting



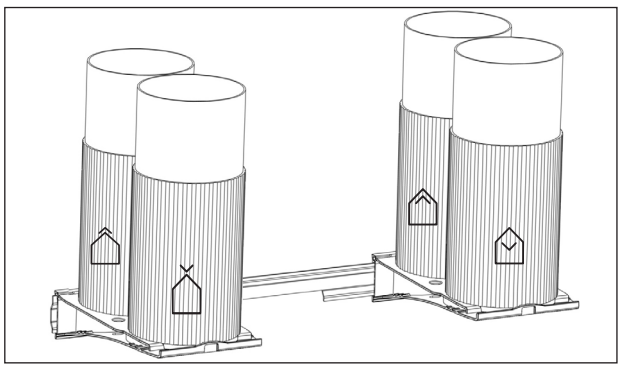
a) Fit the mounting bracket **A** horizontally to the wall, using appropriate fixings**.**



b) Fit the two duct adapters **B** to each end of the mounting bracket **A**.



c) Ensure that the adapters **B** are placed flush to each end of the mounting bracket **A** and the spigot seals **C** are secured firmly on top of each spigot.

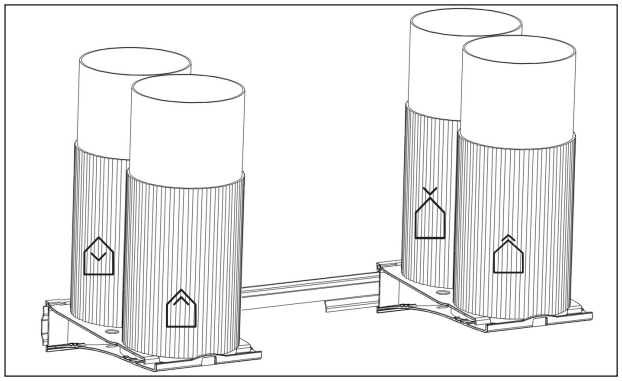


d) Install the four air ducts on the spigots.

Option 1; stale air to outside and fresh air from outside on the left**.**

Note: Insulate all ducts and also the condensate drain, if the unit is mounted outside the thermal envelope of the building to avoid condensation forming on the ducts.

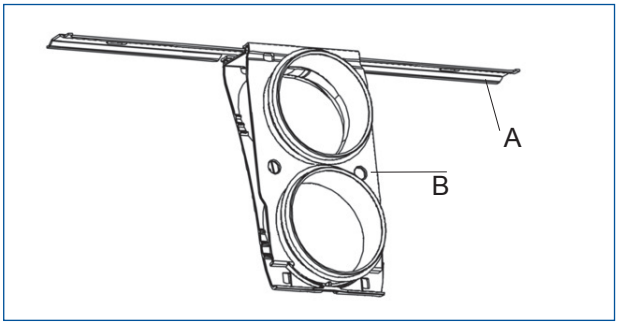
Option 2; stale air to outside and fresh air from outside on the right**.**



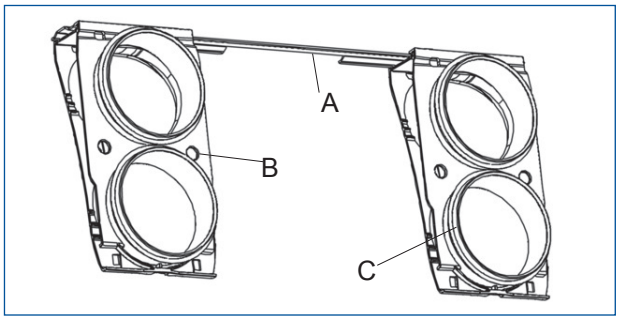
5.3.1 Ceiling mounting

a) Fit mounting bracket **A** to the ceiling, using appropriate fixings.

b) Fit the two duct adapters **B** to each end of the mounting bracket **A**.

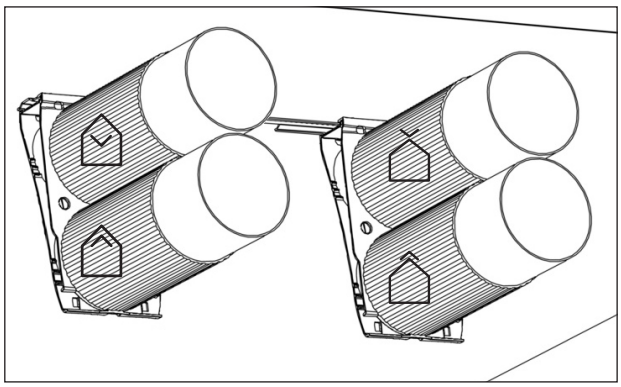


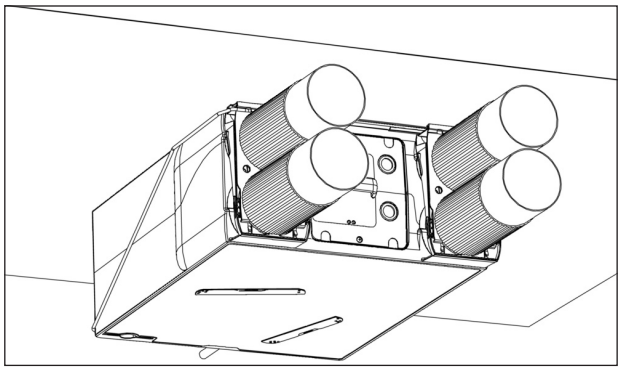
c) Ensure that the adapters **B** are placed flush to each end of the mounting bracket **A** and the spigot seals **C** are secured firmly on top of each spigot.

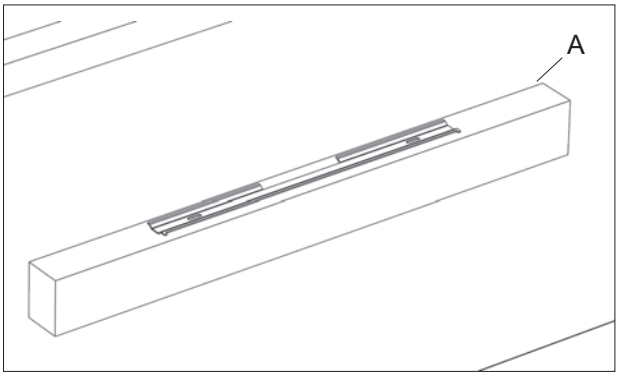


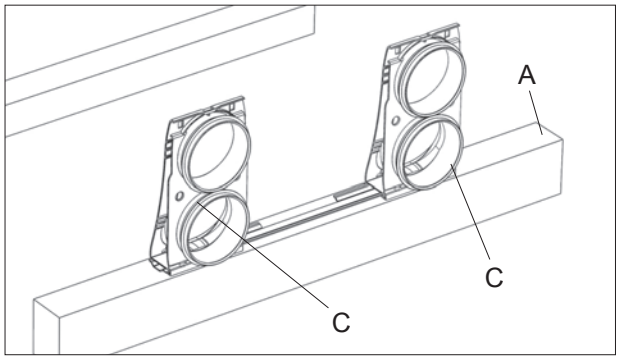
d) Duct connections
The Advance unit must not be mirrored when fixed to the ceiling

Only stale air to outside and fresh air from outside on the right is possible.





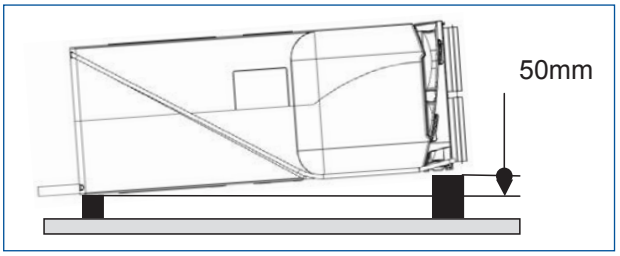


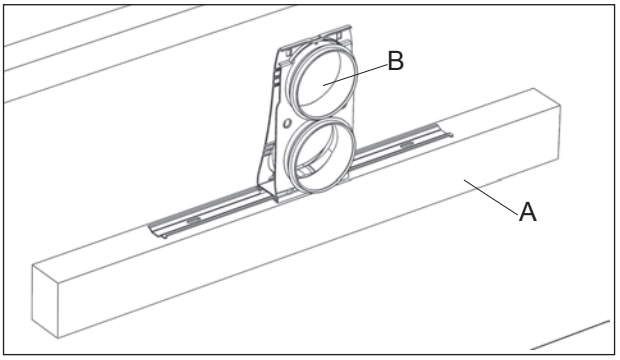


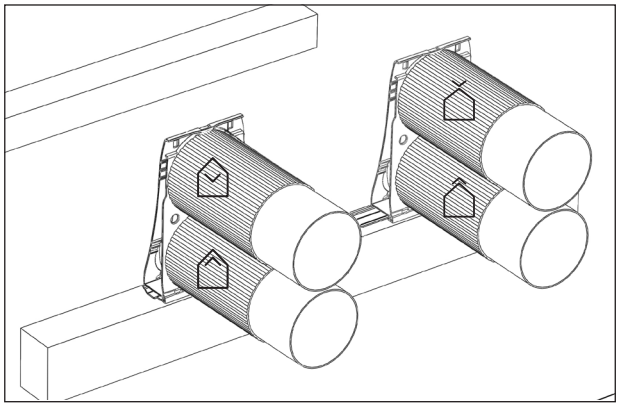
c) Ensure that the adapters **B** are placed flush to each end of the mounting bracket **A** and the spigot seals **C** are secured firmly on top of each spigot.

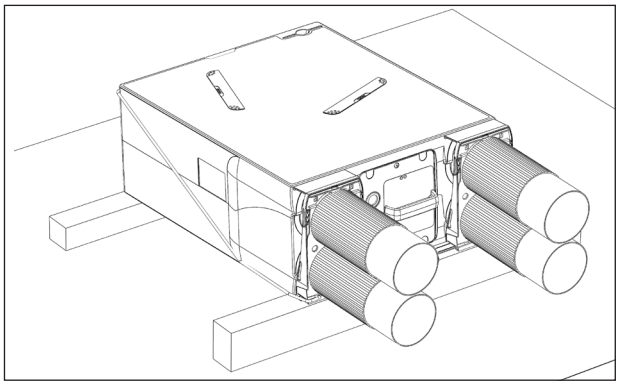
d) Ductconnections
Only stale air to the outside and fresh air from outside on the right is possible

The Advance unit must not be mirrored when it is fixed 50 mm on the floor

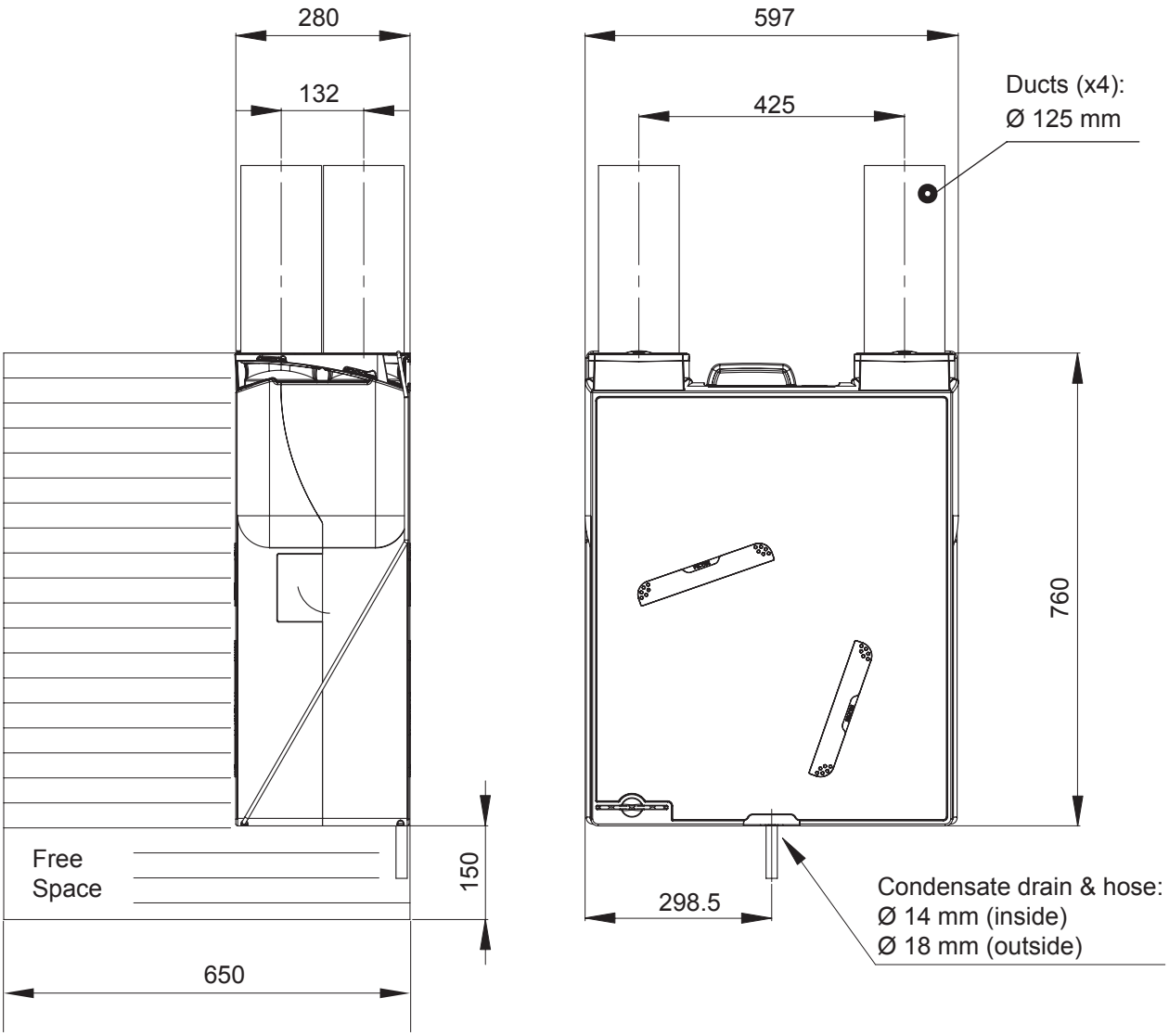








5.4 Clearances required



5.5 Wall/floor/ceiling requirements

It is important to fit the bracket on a solid flat wall or board with at least 200 kg/m^3 density to ensure that the sound exposure is not too high for dwelling requirements.

5.6 Unpacking the unit

Open the carton on the marked side. Pull out the unit from the carton by the handle on the unit.

The package contents:

- Advance unit.
- Two side bars.
- Installer manual.
- User manual
- Condensation hose.

5.7 Mirroring the unit

a) Loosen the duct adapters from the unit.

- Put a screw driver in front of the duct connectors.

Note:

The duct connection kit is supplied in its own box and even if fitted at the same time as the unit this procedure is the one to follow.

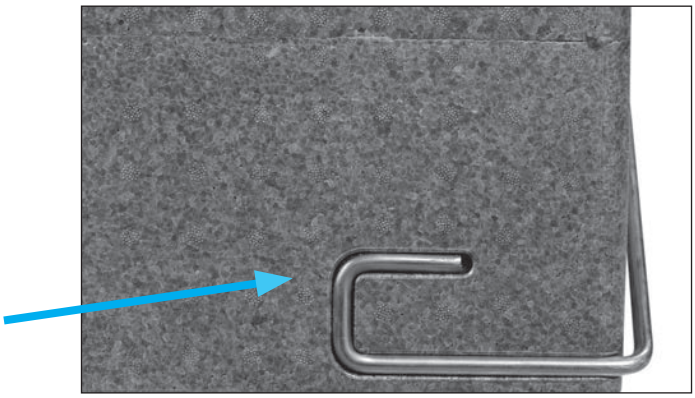
b) Disconnect the duct connector from both the left and right sides.

c) Pull the plastic duct connector out of the Advance unit.

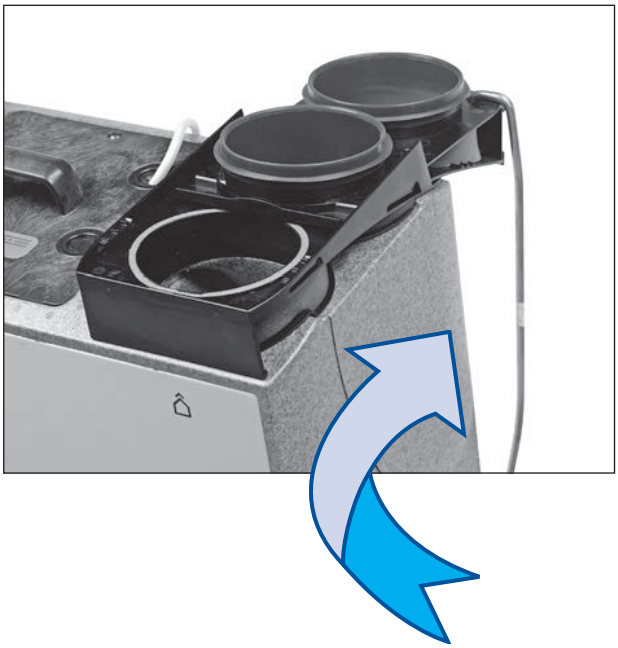
- Make your choice for the front of the Advance unit according to duct connections on left or right side (see section 5.2 p.8).
- Place back the plastic duct connector into the Advance unit with the profile backwards curved as shown on the picture. This is the only way to slide the unit into the duct connectors.

5.8 Fit the unit into the bracket

a) Place both iron side bars in the hole at the bottom of the Advance unit.



b) Slide the unit backwards into the duct connecters at the top.



c) Both duct connectors are correctly sealed when you hear a "Click".

5.9 Condensate Drain Connection

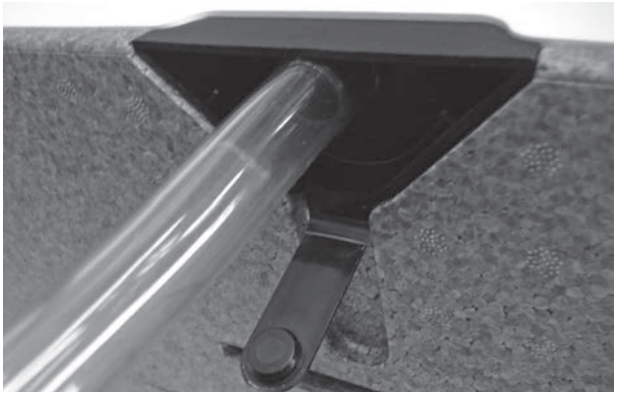
On the bottom of the unit there are two drain connections. In case of floor and ceiling mounting use the lowest connection. For wall mounting, use the connection at the wall side.

A) Open the drain connection

Open the plastic stitched tongue for the drain connection.

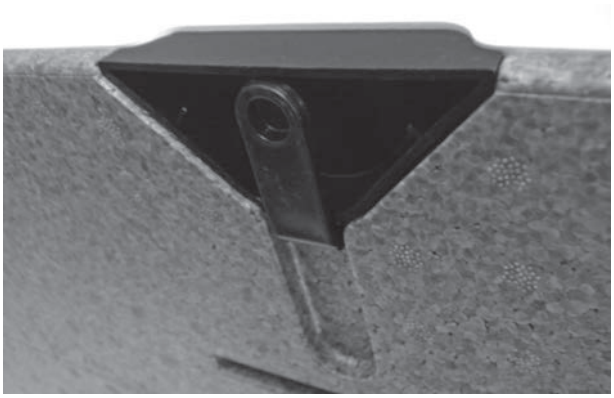
B) Install the flexible hose

Put the flexible hose on the connection.



C)

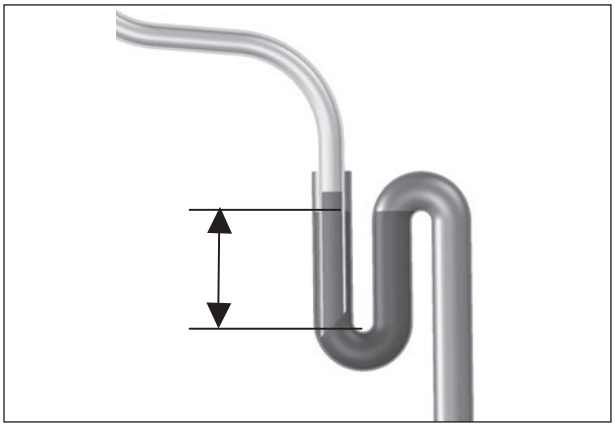
IMPORTANT
Please ensure that whichever connection is not used is sealed off.



D) Put the flexible hose into the condensate trap.

IMPORTANT

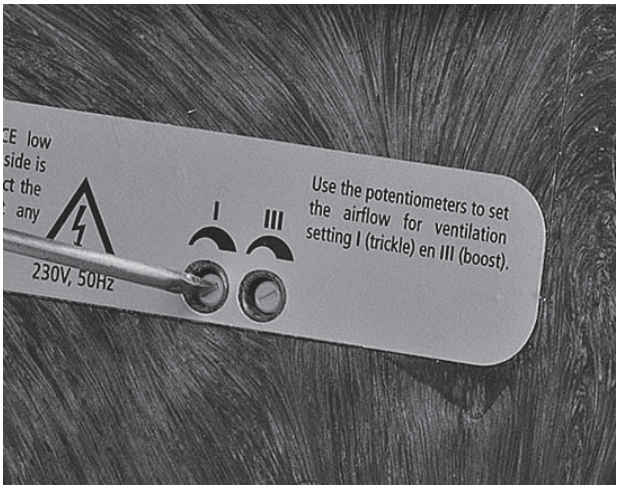
- Be sure that there is at least 50 mm water level in the trap.
- Be sure that the condensate water is not blocked by a sharp bend in the flexible hose.
- Be sure that the flexible hose has been installed downwards.
- Ensure flexiable hose is sealed into waste pipe to stop air leakage.



6. Commissioning

6.1 Manual potentiometers low and boost speed

I. Low speed	Range: 800 - 2100 rpm
II. Middle speed	Range: see chapter 6.2.
III. Boost speed	Range: 2100 - 2700 rpm



6.2 Middle speed

Middle speed has been set in the controllers software by the manufacturer and cannot be changed.
Setting:
Middle Speed = ((rpm's boost - rpm's low) X 40%) + rpm's low

6.3 Commissioning data

Extract Ventilation Rates				
	Speed 1 (Constant)		Speed 3 (Boost)	
Room reference (location of terminals)	Measured air flow Low rate (l/s)	Design air flow Low rate (l/s) Refer to table 5.1a in ADF	Measured air flow High rate (l/s)	Design air flow High rate (l/s) Refer to table 5.1a in ADF
Kitchen				
WC				
Bathroom				
En suite				
Other...				
Other…				
Other…				
Other...				
Other...				
Building Total				

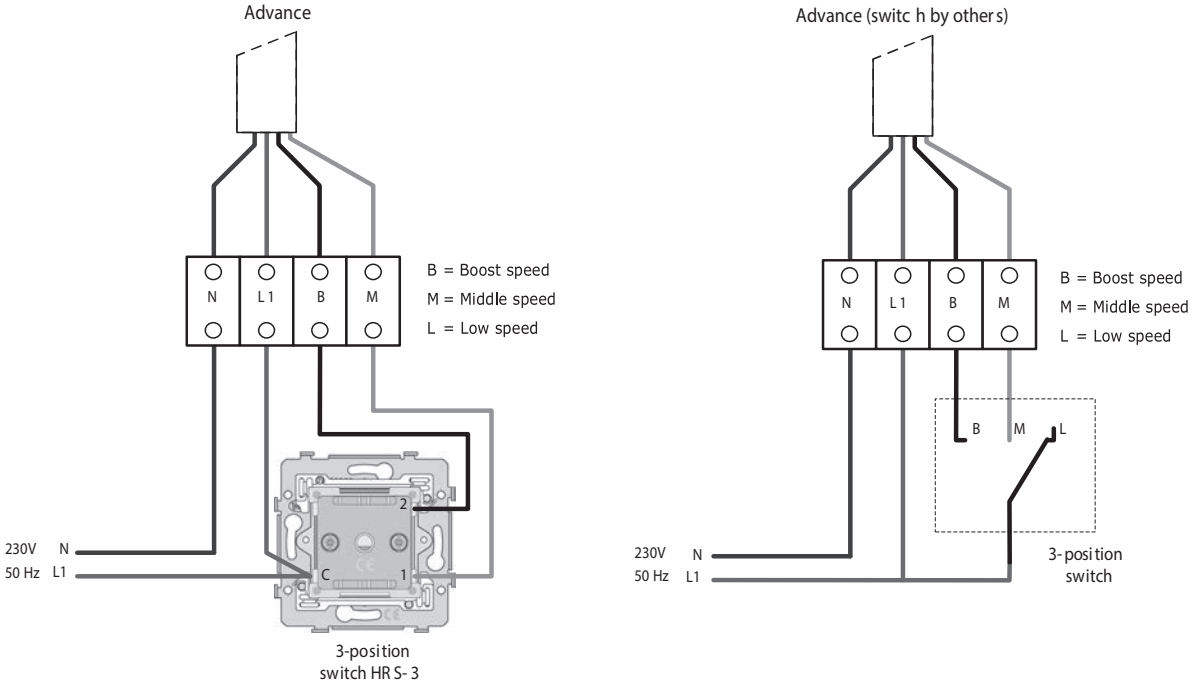
Supply Ventilation Rates				
	Speed 1 (Constant)		Speed 3 (Boost)	
Room reference (location of terminals)	Measured air flow Low rate (l/s)	Design air flow Low rate (l/s) Refer to table 5.1a in ADF	Measured air flow High rate (l/s)	Design air flow High rate (l/s) Refer to table 5.1a in ADF
Living Room				
Living Room 2 (if present)				
Dining Room				
Bedroom 1				
Bedroom 2				
Bedroom 3				
Bedroom 4				
Bedroom 5				
Study				
Other...				
Other...				
Other...				
Building Total				

7. Wiring diagram

7.1 Hard wired speed selector

The Advance unit has been equipped with a 4-core electric power cord without plug. In case of an external wired speed controller connect:

- Brown to live.
- Blue to neutral.
- Black to boost position selector switch.
- Grey to middle position selector switch.



NOTE

- If there is no wired speed selector, you are allowed to cut off the black and grey wire.
- The Advance is a double insulated unit and doesn’t need an earth wire.

7.2 RFT-remote controllers

The Advance unit has a RFT-receiver on board. The remote controller must be paired to the Advance unit. It is possible to connect more remote controllers to one Advance unit (maximum 20 remote controllers).
Pairing:

- Disconnect the electric power cord from the mains supply for at least 15 seconds.
- Push Button (+), or (+) together within 120 seconds after plugging in the electric power cord of the Advance unit.

Tip
Pairing the remote controller to the Advance unit in the direct vacinity of the unit makes the job easier to do.

Disconnecting:
In the situation of wrongly paired remote controllers or reinstalling installation parts, first disconnect the remote controller(s) before you start the pairing procedure:

- Disconnect the electric power cord from the mains supply for at least 15 seconds.
- Push Button (+ + +) together within 120 seconds after plugging in the electric power cord of the Advance unit.

Conditions for good operation:

- Max length receiver/transmitter 25 metre indoor.
- No metal shield in ceiling or wall.

Buttons function:

- Low speed
- Middle speed
- Boost speed
- Timer, 10 minutes/step (up to 30 minutes)

8. Trouble shooting

8.1 FAQ's for the installer

a) The fan has stopped unexpectedly.

- Mains voltage failure, check the Fuse Spur in the distribution board cabinet/meter cupboard.
- Plug in the power cord.
- Frost protection active, wait for several minutes and the fan will be switched on automatically.

b) The unit makes a lot of noise.

Gurgling noise coming out the unit.

- The condensate trap below the unit has a low water level, fill it up with water.
- The flexible condensate hose is not completely in the condensate trap, push it deeper.

Rattling noise coming out the unit.

- Fan motor fault, open the motor unit and check or clean the fan. **Do not** change the balance clips.

Swishing sound coming out of the grilles.

- There is too much air pressure drop in the duct and grilles, clean both filters in the Advance unit and the grilles in the rooms and check if the grilles are in their original position.
- Check the air volumes.

c) I want to switch off the unit at night.

- Not possible, you also need fresh air during the night.

d) Unpleasant smell.

I smell the cooking in the whole house.

- Air extract rates are too low, switch on boost speed at cooking time.
- The filters are polluted, clean or replace both filters.
- The grilles are dirty, clean all grilles.

Near the unit.

- Condensate trap below the unit is empty, fill it with water.
- The flexible condensate hose is not completely in the condensate trap, push it in deeper.

Near the supply air grilles.

- The unpleasant air comes from outside, not a ventilation fault but to be sure, check and clean supply air filter.

e) Too much condensation in the bathroom.

- Too low exhaust air volume, switch on boost speed while showering or bathing. Check and clean filters and grille.

f) Water leakage near the unit.

- Condensate trap is clogged, clean it.
- Condensate flexible hose is clogged or twisted, clean it and replace it into the trap.

g) No speed change after pushing the button on the RFT remote controller.

- Disconnect and bind the remote controller to the unit again (see section 7.2 p.18).
- Replace the battery in the remote controller (type CR2032 Li-Mn).

h) Condensation or water leaking on the supply air duct.

- A non rain proof outside air grille has been installed.
- The duct is not damp proof insulated.

9. Maintenance and spare parts

9.1 Maintenance

9.1.1 Cleaning the unit outside covers

Keep the unit surface free from dust.

9.1.2 Filter replacement and cleaning

For the user, maintenance is limited to cleaning and replacing the filters.
These will need to checked annually and either cleaned or replaced.
This may differ per situation depending on environmental pollution from industry or traffic and also the activities in the house.

9.1.3 Cleaning the motor and fan

A)

- Disconnect the electric power cord from the mains supply.
- Remove both screws of the motor part.

B)

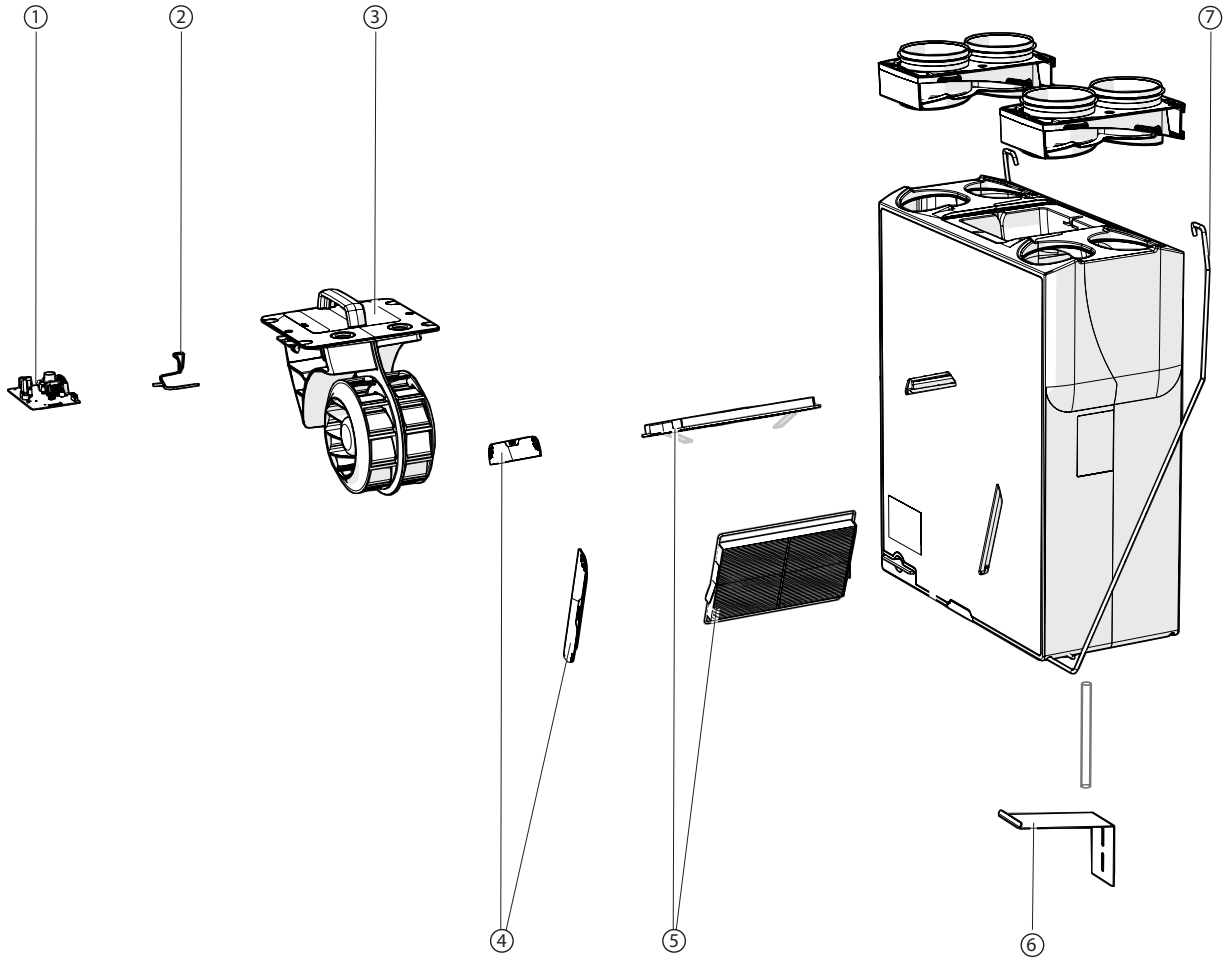
- Pull the complete motor part out of the unit.
- Clean the fan with a vacuum cleaner.

WARNING
Do not displace the fan balance clips.

C)

- Put it all back again and fasten screws, reconnect to power.

9.2 Exploded view



9.3 Part list

Exploded view no.	Description	Part no.
1	PCB Advance unit	95615089
2	Frost protection sensor	95607725
3	Motor service module complete	95607724
4	Filter cover set	95607728
5	G4 filter set	95970009
	F7 filter set	95970010
6	Ceiling mounting bracket	95607726
7	Mounting wire set	95607727

10. Appendix

10.1 Guarantee

Warranty
The Advance warranty is valid for 2 years after the installation date.

Disclaimer
This warranty does not apply to:

- Disassembly and assembly costs.
- Faults which are caused by incorrect treatment.
- Negligence or accident.
- Faults that have been caused by repairs by third parties without authorisation from Heatrae Sadia Heating.

If the appliance does not function correctly or develops a fault please contact Heatrae Sadia Heating immediately.

Ensure that only genuine spares are used for repairs.

10.2 Manufacturer declaration

EC declaration of conformity
According to Low Voltage Directive 2006/95/EC and the EMC Directive 2004/'06/EC.

Declaration of Incorporation
According to Annex IIB of the Machinery Directive 2006/42/EC.

Heatrae Sadia Heating
Hurricane Way
Norwich NR6 6EA

Hereby declare under our sole responsibility that the following products:

Heat Recovery Ventilation System
Type Advance

Is in conformity with the following EC Council Directives:
Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC

and Applied Harmonised Standards:

- EN60730-1
- EN61000-3-2
- EN61000-6-1
- EN61000-6-3
- RoHs/Weee

and must be regarded as partly completed machinery and is intended to be incorporated in a machine or to be assembled with other machines into a single machine or system to which the Machinery Directive 2006/42/EC applies.

We want to alert you that the product to be incorporated in a ventilation system and that the partly completed machine must not be put into service until the final machinery into which it is to be incorporated is in conformity with the provisions of Machinery Directive 2006/42/EC for which the most important instructions can be found in the manual.

We explicitly state that the CE marking on the product only refers to the Low Voltage Directive 2006/95/EC and the EMC Directive 2006/108/EC.

After the submission of a declaration according to Annex IIA of the Machinery Directive for the entire installation, the CE marking on the device also refers to the Machinery Directive 2006/42/EC.

10.3 Installer conformity declaration

According to Annex IIA of the Machinery Directive 2006/42/EC

We: _____

_____

Name of installer: _____

_____

Full address and country: _____

_____

Hereby declare under our own responsibility, to have installed the following product with type designation:

Heat Recovery Ventilation

Type: Advance

to which this declaration refers. We declare the entire installation (being a single machine) in conformity with the Machinery Directive.

Place: _____

Date: _____

Name: _____

Position: _____

Signature:

_____

Company Stamp:

Notes

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SMARTER | CLEANER | WARMER

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